

PATENT ABSTRACTS OF JAPAN

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(54) DECORATIVE PANEL FOR GAME MACHINE AND ITS MANUFACTURE



(57)Abstract:

PROBLEM TO BE SOLVED: To give a three-dimensional feeling to a picture pattern, a pattern, etc., by constituting a decorative panel for a game machine of a transparent panel forming a flat front surface and a recessed/projecting rear surface and a printing sheet stuck along the rear surface of the transparent panel and printed on one main surface.

SOLUTION: This decorative panel 2 is obtained by laminating an acrylic resin transparent panel 21 and an acrylic resin printing sheet 22, and the panel 21 forms a flat main surface 21a equivalent to the front surface side of a slot machine game machine and forms a recessed/projecting main surface 21b on an

opposite side. By forming in the recessed and projecting state like this, three-dimensional feeling appears in the picture pattern and the pattern printed to the sheet 22 by an optical refracting effect at the time of visually recognizing the panel 2 from a front surface side 21a. The sheet 22 is printed with a picture pattern and a pattern on one main surface 22b by a silk screen printing method, etc., inserted at the time of injection molding the panel 21 and joined in a body.

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CLAIMS

[Claim(s)]

[Claim 1] The makeup panel for game machines characterized by having the transprence panel by which the front face was formed and the rear face was formed in concave convex in the shape of flatness, and the printing sheet with which it was stuck along the concave convex rear face of said transprence panel, and printing was performed to one principal plane.

[Claim 2] Said printing sheet is a makeup panel for game machines according to claim 1 characterized by really being fabricated by the rear face of said transprence panel.

[Claim 3] The 1st process which prints to at least 1 principal plane of a printing sheet, and the 2nd process which fabricates said printed printing sheet to concave convex, The manufacture approach of the makeup panel for game machines characterized by having the 3rd process which inserts the printing sheet fabricated by said concave convex to a die, and the 4th process which fabricates the transprence panel by which the front face was formed, the rear face was formed in concave convex in the shape of flatness, and said printing sheet was really fabricated by the rear face concerned.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the makeup panel for game machines which can especially give a cubic effect to a pattern, a pattern, etc., and its manufacture approach about the makeup panel used for the case of the various game machines of a slot machine game machine and others, and its manufacture approach.

[0002]

[Description of the Prior Art] As shown in the case of this kind of slot machine game machine 1 at drawing 6 , the makeup panel 2 aiming at an ornament etc. is formed. The conventional makeup panel 2 for slot machines has that common to which the case front face stuck on the front face or rear face of the resin panel 21 the sheet 22 which treated the pattern and the pattern 221 by silk screen printing from constraint that it must be, by the shape of flatness as shown in drawing 7 .

[0003]

[Problem(s) to be Solved by the Invention] However, in the 2-dimensional pattern and pattern like before, since it was restricted only from design--chiefly views, such as adopting a shaded character also for giving a feeling of depth etc., there was a fixed limitation in grant of a cubic effect.

[0004] This invention is made in view of the trouble of such a conventional technique, and aims at offering the makeup panel for game machines which can give a cubic effect to a pattern, a pattern, etc., and its manufacture approach.

[0005]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, the makeup panel for game machines according to claim 1 is characterized by having the transparence panel by which the front face was formed and the rear face was formed in concave convex in the shape of flatness, and the printing sheet with which it was stuck along the concave convex rear face of said transparence panel, and printing was performed to one principal plane.

[0006] Although there is constraint that the makeup panel for game machines must have the case front face of a game machine at the shape of flatness, since a rear face is formed in concave convex and the printing sheet with which printing was performed is stuck on this concave convex rear face while a front face is flatness-like, the makeup panel of this invention can give the cubic effect which cannot be expressed by the two-dimensional design according to the optical refraction effectiveness.

[0007] In the makeup panel for game machines according to claim 1, although especially a means to stick a printing sheet on the rear face of said transparence panel may be stuck with adhesives etc. after it is not limited but fabricates a transparence panel and a printing sheet separately, respectively, the makeup panel for game machines according to claim 2 is characterized by the printing sheet really being fabricated by the rear face of a transparence panel. By carrying out like this, the attachment process needed separately can be skipped and improvement and a cost cut of productivity are achieved.

[0008] Moreover, the manufacture approach of the makeup panel for game machines according to claim 3 The 1st process which prints to at least 1 principal plane of a printing sheet, and the 2nd process which fabricates said printed printing sheet to concave convex, It is characterized by having the 3rd process which inserts the printing sheet fabricated by said concave convex to a die, and the 4th process which fabricates the transparence panel by which the front face was formed, the rear face was formed in concave convex in the shape of flatness, and said printing sheet was really fabricated by the rear face concerned.

[0009] By the manufacture approach of this invention, a desired pattern, a

desired pattern, etc. are first printed to at least 1 principal plane of a plate-like printing sheet at the 1st process. Especially the printing technique in this case is not limited, but can apply well-known technique, such as screen printing. Next, the printing sheet with which the pattern and the pattern were printed at the 2nd process is fabricated to desired concave convex.

[0010] The concave convex of a request here has the shape of three-dimensions surface type which can use the optical refraction effectiveness, and is a final rear-face configuration of a makeup panel. Especially a concrete configuration is determined by relation with the pattern and pattern which were not limited, for example, were printed by the printing sheet. Moreover, what is necessary is just to choose suitably by relation with the quality of the material which constitutes a printing sheet, although especially the shaping approach of a printing sheet is not limited but the shaping approaches, such as a vacuum-forming method and the press (compression) fabricating method, are used preferably.

[0011] At the 3rd process, the printing sheet fabricated by concave convex is inserted to the die of a transference panel (set). In this way, after inserting a printing sheet, resin is injected into the cavity formed in the mold clamp meal and the mold in the die, and a transference panel is fabricated at the 4th process. Although especially this shaping approach is not limited, an injection-molding method etc. is used preferably, for example.

[0012] Thus, the makeup panel by which the front face was formed, the rear face was formed in concave convex in the shape of flatness, and the printing sheet was really fabricated by the rear face concerned can be obtained. Since a printing sheet is really fabricated by this manufacture approach at the time of transference panel shaping, a routing counter can be controlled to the minimum and improvement in productivity is achieved. Moreover, the makeup panel for game machines can be manufactured by low cost.

[0013] In this invention according to claim 1 to 3, although especially the ingredient that constitutes a transference panel is not limited, it excels in transparency, surface glossiness, chemical resistance, and weatherability, and a

color tone is variegated, it is tough, and the acrylic resin (PMMA) which was rich in the light weight and the moldability can be illustrated.

[0014] Moreover, although especially the ingredient that constitutes a printing sheet is not limited, the cheap polyvinyl chloride resin (PVC) which was excellent in others, transparency, weatherability, low absorptivity, and chemical resistance, and fitted a vacuum forming and compression molding, the polyethylene terephthalate resin (PET) which was similarly excellent in transparency, a mechanical property, thermal resistance, and thin-film-fabrication nature can be illustrated. [acrylic resin / as the transparence panel mentioned above / same] In addition, when a printing sheet is constituted from same acrylic resin as a transparence panel, since it excels in compatibility and adhesion, it is not necessary to apply a primer to both interface.

[0015] Although limitation is not carried out, as for the makeup panel offered by this invention, it uses for the case of the game machine of the slot machine demanded and others and is especially desirable [limitation] that a field is flat on the other hand.

[0016]

[Embodiment of the Invention] Hereafter, the operation gestalt of this invention is explained based on a drawing. Drawing 1 is the sectional view showing the operation gestalt of the makeup panel for game machines of this invention, and is I-I of drawing 6 . It is a sectional view equivalent to a line. The makeup panel 2 of this operation gestalt is applicable as a panel of **, such as a front face, a side face, etc. of a slot machine game machine which are shown in drawing 6 , and case every place.

[0017] This makeup panel 1 is the same with the transparence panel 21 made of acrylic resin, and the laminating of the printing sheet 22 made of acrylic resin is carried out, it is formed, and the drawing bottom of drawing 1 is equivalent to the front-face side of the case of a slot machine game machine.

[0018] If it is in the transparence panel 21 of this operation gestalt, principal plane 21a equivalent to the front-face side of a slot machine game machine is formed

in the shape of flatness, and principal plane 21b of the opposite side is formed in concave convex. Concave convex here may mean being partially formed in concave convex at least, and you may have the flat side partially.

[0019] Thus, by forming in concave convex, when the makeup panel 2 is checked by looking from front-face side 21a, a cubic effect will appear in the pattern and pattern which were printed by the printing sheet 22 later mentioned according to the optical refraction effectiveness. In the semantics, the shape of toothing is suitably determined by the pattern of the printing sheet 22, and relation with a pattern.

[0020] The printing sheet 22 is stuck on rear-face 21b of the transparence panel 21, and the pattern and the pattern are printed by silk screen print processes etc. at one principal plane 22b of this printing sheet 22. With this operation gestalt, as for plane-of-composition 22a with the transparence panel 21, printing is performed to principal plane 22b of the opposite side.

[0021] Moreover, in case this printing sheet 22 carries out injection molding of the transparence panel 21, it is inserted, and it is joined in one. However, by the makeup panel 2 of this invention, it is not limited only to insert molding but the transparence panel 21 and the printing sheet 22 may be joined using junction means, such as adhesives.

[0022] Next, the manufacture approach of a makeup panel is explained. Drawing 2 - drawing 5 are the sectional views showing the manufacture approach of the makeup panel of this operation gestalt, and first, as shown in drawing 2, they print a desired pattern, a desired pattern, etc. to 1 principal-plane 22b of the plate-like printing sheet 22.

[0023] Although especially the printing technique in this case is not limited, it can apply well-known technique, such as screen printing. Moreover, when the compatibility of the printing sheet 22 and the transparence panel 21 has concern, the etching primer for adhesion is applied after this process or the vacuum forming mentioned later at plane-of-composition 22a with the transparence panel 21 of the printing sheet 22.

[0024] Next, the printing sheet 22 with which the pattern and the pattern were printed is fabricated in the rear-face configuration of the makeup panel 2 using the vacuum forming machine 3 shown in drawing 3 . This vacuum forming machine 3 has the male 31 of the shape of toothing corresponding to the rear-face configuration of the makeup panel 2, the clamp 32 for grasping the printing sheet 22, the heater 33 that carries out heating softening of the printing sheet 22, and a vacuum pump outside drawing, and attracts the air of the opening of the printing sheet 22 and a male 31 through two or more holes 311 established by the male 31.

[0025] In carrying out a vacuum forming using this vacuum forming machine 3, the printing sheet 22 is set to a clamp 32, and it carries out heating softening of this at a heater 33. And after raising a male 31 and making the printing sheet 22 approach the male 31 concerned, the air of the opening of the printing sheet 22 and a male 31 is attracted with a vacuum pump. By this, the softened printing sheet 22 will be fabricated by concave convex in accordance with the shape of surface type of a male 31. Thus, the fabricated printing sheet 22 is shown in drawing 4 .

[0026] Next, it sets to one mold 41 of the injection molding machine 4 which shows the printing sheet 22 shown in drawing 4 to drawing 5 . This injection molding machine 4 has two dice 41 and 42 which have an inside configuration according to the configuration of the makeup panel 2, and an extruder outside drawing, and can fabricate the makeup panel 2 by which the printing sheet 22 was inserted to the rear face by injecting melting resin into the cavity 43 formed by mold clamp carrying out of the die 41,42.

[0027] In addition, in this invention, the shaping approach of a printing sheet is not limited only to the vacuum-forming method mentioned above, but can also use the shaping approaches, such as the press (compression) fabricating method.

[0028] At the 3rd process, the printing sheet fabricated by concave convex is inserted to the die of a transparence panel (set). In this way, after inserting a

printing sheet, resin is injected into the cavity formed in the mold clamp meal and the mold in the die, and a transparenance panel is fabricated at the 4th process. Although especially this shaping approach is not limited, an injection-molding method etc. is used preferably, for example.

[0029] Thus, the makeup panel by which the front face was formed, the rear face was formed in concave convex in the shape of flatness, and the printing sheet was really fabricated by the rear face concerned can be obtained. Since a printing sheet is really fabricated by this manufacture approach at the time of transparenance panel shaping, a routing counter can be controlled to the minimum and improvement in productivity is achieved. Moreover, the makeup panel for slot machines can be manufactured by low cost.

[0030] In addition, the operation gestalt explained above was indicated in order to make an understanding of this invention easy, and it was not indicated in order to limit this invention. Therefore, each element indicated by the above-mentioned operation gestalt is the meaning also containing all the design changes belonging to the technical range of this invention, or equal objects.

[0031] For example, although each constituted the transparenance panel 21 and the printing sheet 22 with acrylic resin, they can also constitute the printing sheet 22 from an operation gestalt mentioned above with polyvinyl chloride resin or polyethylene terephthalate resin.

[0032]

[Effect of the Invention] According to this invention, it uses [can offer the makeup panel which has the cubic effect which cannot be expressed by the two-dimensional design even if a field is flat, and / for the case of a game machine] on the other hand, and is desirable as stated above.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the sectional view showing the operation gestalt of the makeup panel for game machines of this invention.

[Drawing 2] It is a sectional view (presswork) for explaining the manufacture approach of the makeup panel for game machines of this invention.

[Drawing 3] It is a sectional view (vacuum-forming process of a printing sheet) for explaining the manufacture approach of the makeup panel for game machines of this invention.

[Drawing 4] It is the sectional view showing the printing sheet obtained according to the vacuum-forming process of a printing sheet.

[Drawing 5] It is a sectional view (injection-molding process of a transparence panel) for explaining the manufacture approach of the makeup panel for game machines of this invention.

[Drawing 6] It is the perspective view showing a slot machine game machine.

[Drawing 7] It is the sectional view showing the conventional makeup panel.

[Description of Notations]

1 -- Slot machine game machine (game machine)

2 -- Makeup panel

21 -- Transparence panel

21a -- Front face

21b -- Rear face

- 22 -- Printing sheet
22a -- Plane of composition
22b -- Printing side
3 -- Vacuum forming machine
4 -- Injection molding machine
-

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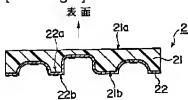
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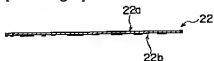
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DRAWINGS

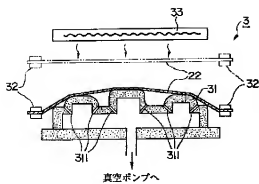
[Drawing 1]



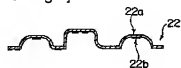
[Drawing 2]



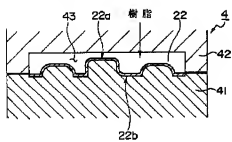
[Drawing 3]



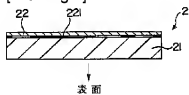
[Drawing 4]



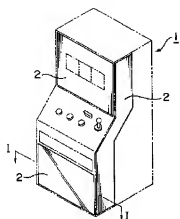
[Drawing 5]



[Drawing 7]



[Drawing 6]



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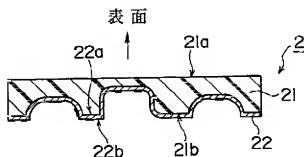
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(54) 【発明の名称】 ゲーム機用化粧パネルおよびその製造方法

(57) 【要約】

【課題】 絵柄や模様等に立体感が付与できるゲーム機用化粧パネルを提供する。

【解決手段】 表面21aが平坦状、裏面21bが凹凸状に形成された透明パネル21と、透明パネルの凹凸状裏面21bに一体的にインサート成形され、一方の主面22bに印刷が施された印刷シート22とを有する。



【特許請求の範囲】

【請求項1】表面が平坦状、裏面が凹凸状に形成された透明パネルと、前記透明パネルの凹凸状裏面に沿って貼り付けられ、一方の主面に印刷が施された印刷シートとを有することを特徴とするゲーム機用化粧パネル。

【請求項2】前記印刷シートは、前記透明パネルの裏面に一体成形されていることを特徴とする請求項1記載のゲーム機用化粧パネル。

【請求項3】印刷シートの少なくとも一面に印刷を施す第1の工程と、前記印刷された印刷シートを凹凸状に成形する第2の工程と、前記凹凸状に成形された印刷シートを成形型にインサートする第3の工程と、表面が平坦状、裏面が凹凸状に形成され当該裏面に前記印刷シートが一体成形された透明パネルを成形する第4の工程とを有することを特徴とするゲーム機用化粧パネルの製造方法。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、スロットマシンゲーム機等の他の各種ゲーム機の筐体に用いられる化粧パネルおよびその製造方法に関し、特に絵柄や模様等に立体感が付与できるゲーム機用化粧パネルおよびその製造方法に関する。

【0002】

【従来の技術】この種のスロットマシンゲーム機の筐体には、図らに示されるように装飾などを目的とした化粧パネル2が設けられている。従来のスロットマシン用化粧パネル2は、筐体表面が平坦状でなければならないという制約から、図7に示すように樹脂パネル2.1の表面または裏面にシルクスクリーン印刷により絵柄や模様2.2をあしらったシート2.2を貼り付けたものが一般的である。

【0003】

【発明が解決しようとする課題】しかしながら、従来のような二次元の絵柄や模様では、深み感などを与えるにも影付文字を採用するなど、専らデザイン的な視点からのみに制限されていたので、立体感の付与には一定の限界があった。

【0004】本発明は、このような従来技術の問題点に鑑みてなされたものであり、絵柄や模様等に立体感が付与できるゲーム機用化粧パネルおよびその製造方法を提供することを目的とする。

【0005】

【課題を解決するための手段】上記目的を達成するために、請求項1記載のゲーム機用化粧パネルは、表面が平坦状、裏面が凹凸状に形成された透明パネルと、前記透明パネルの凹凸状裏面に沿って貼り付けられ、一方の主面に印刷が施された印刷シートとを有することを特徴とする。

【0006】ゲーム機用化粧パネルは、ゲーム機の筐体

表面が平坦状でなければならないという制約はあるが、本発明の化粧パネルは表面が平坦状である一方で、裏面が凹凸状に形成され、この凹凸状裏面に印刷が施された印刷シートが貼り付けられているので、光学的屈折効果により二次元的デザインでは表現できない立体感を付与することができる。

【0007】請求項1記載のゲーム機用化粧パネルにおいて、前記透明パネルの裏面に印刷シートを貼り付ける手段は、特に限定されず透明パネルおよび印刷シートをそれぞれ別々に成形したのち接着剤等により貼り付けても良いが、請求項2記載のゲーム機用化粧パネルは、印刷シートが透明パネルの裏面に一体成形されていることを特徴とする。このことで、別途必要とされる貼着工程を省略することができ、生産性の向上およびコストダウンが図られる。

【0008】また、請求項3記載のゲーム機用化粧パネルの製造方法は、印刷シートの少なくとも一面に印刷を施す第1の工程と、前記印刷された印刷シートを凹凸状に成形する第2の工程と、前記凹凸状に成形された印刷シートを成形型にインサートする第3の工程と、表面が平坦状、裏面が凹凸状に形成され当該裏面に前記印刷シートが一体成形された透明パネルを成形する第4の工程とを有することを特徴とする。

【0009】本発明の製造方法では、まず第1の工程にて、平板状の印刷シートの少なくとも一面に所望の図柄や模様などを印刷する。この場合の印刷手法は特に限定されず、スクリーン印刷法など公知の手法が適用できる。次に、第2の工程にて、図柄や模様が印刷された印刷シートを所望の凹凸状に成形する。

【0010】ここでいう所望の凹凸状とは、光学的屈折効果を利用できる三次元表面形状であり、化粧パネルの最終的な裏面形状である。具体的な形状は特に限定されず、例えば印刷シートに印刷された図柄や模様との関係で決定される。また、印刷シートの成形方法は特に限定されず、真空成形法、プレス（圧縮）成形法などの成形方法が好ましく用いられるが、印刷シートを構成する材質との関係で適宜選択すればよい。

【0011】第3の工程では、凹凸状に成形された印刷シートを透明パネルの成形型にインサート（セット）する。こうして印刷シートをインサートしたのち、第4の工程では、成形型を型締めし、型内に形成されたキャビティに樹脂を注入して透明パネルを成形する。この成形方法は特に限定されないが、例えば射出成形法などが好ましく用いられる。

【0012】このようにして、表面が平坦状、裏面が凹凸状に形成され当該裏面に印刷シートが一体成形された化粧パネルを得ることができる。この製造方法では、印刷シートが透明パネル成形時に一体成形されるので、工程数を最小限に抑制することができ、生産性の向上が図られる。また、低コストでゲーム機用化粧パネルを製造

することができる。

【0013】請求項1乃至3記載の本発明において、透明パネルを構成する材料は特に限定されないが、透明性、表面光沢性、耐薬品性および耐候性に優れ、色調が多彩で、強靱で軽量、かつ成形性に富んだアクリル樹脂（PMMA）を例示することができる。

【0014】また、印刷シートを構成する材料は特に限定されないが、上述した透明パネルと同じアクリル樹脂の他、透明性、耐候性、低吸水性および耐薬品性に優れた真空成形や圧縮成形に適した安価なポリ塩化ビニル樹脂（PVC）や、同じく透明性、機械的特性、耐熱性および薄膜製造性に優れたポリエチレンテレフタレート樹脂（PET）などを例示することができる。なお、印刷シートを透明パネルと同じアクリル樹脂で構成した場合には、相溶性および密着性に優れているので両者の境界面にプライマーを塗布する必要はない。

【0015】本発明により提供される化粧パネルは、限定はされないが、特に一方が平坦であることが要求されるスロットマシンその他のゲーム機の筐体に用いて好ましい。

【0016】

【発明の実施形態】以下、本発明の実施形態を図面に基いて説明する。図1は本発明のゲーム機用化粧パネルの実施形態を示す断面図であり、図6のI-I線に相当する断面図である。本実施形態の化粧パネル2は、図6に示すスロットマシンゲーム機の前面や側面等々、筐体各所のパネルとして適用することができる。

【0017】この化粧パネル1は、アクリル樹脂製透明パネル21と、同じくアクリル樹脂製印刷シート22とが積層されて形成されており、図1の図面上側がスロットマシンゲーム機の筐体の表面側に相当する。

【0018】本実施形態の透明パネル21にあっては、スロットマシンゲーム機の表面側に相当する主面21aは平坦状に形成され、反対側の主面21bは凹凸状に形成されている。ここでいう凹凸状とは、少なくとも部分的に凹凸状に形成されていることを意味し、部分的に平坦面を有していても良い。

【0019】このように凹凸状に形成することで、表面側21aから化粧パネル2を視認したときに光学的屈折効果によって後述する印刷シート22に印刷された絵柄や模様は立体感が現れることになる。その意味で、凹凸形状は印刷シート22の絵柄や模様との関係で適宜決定される。

【0020】透明パネル21の裏面21bには、印刷シート22が貼付付けられており、この印刷シート22の主面22bにはシルクスクリーン印刷法などによって絵柄や模様が印刷されている。本実施形態では、透明パネル21との接合面22aとは反対側の主面22bに印刷が施されている。

【0021】また、この印刷シート22は、透明パネル

21を射出成形する際にインサートされ、一体的に接合されている。ただし、本発明の化粧パネル2では、インサート成形にのみ限定されず、接着剤などの接合手段を用いて透明パネル21と印刷シート22とを接合しても良い。

【0022】次に化粧パネルの製造方法について説明する。図2〜図5は本実施形態の化粧パネルの製造方法を示す断面図であり、まず、図2に示すように、平板状の印刷シート22の主面22bに所望の図柄や模様などを印刷する。

【0023】この場合の印刷手法は特に限定されないがスクリーン印刷法など公知の手法が適用できる。また、印刷シート22と透明パネル21との相溶性に懸念がある場合には、この工程あるいは後述する真空成形後に印刷シート22の透明パネル21との接合面22aに接着用プライマーを塗布する。

【0024】次に、図3に示す真空成形機3を用いて、図柄や模様が印刷された印刷シート22を化粧パネル2の裏面形状に成形する。この真空成形機3は、化粧パネル2の裏面形状に対応した凹凸形状の雄型31と、印刷シート22を把持するためのクランプ32と、印刷シート22を加熱軟化させるヒータ33と、図外の真空ポンプとを有し、雄型31に開設された複数の孔311を介して、印刷シート22と雄型31との空隙の空気を吸引する。

【0025】この真空成形機3を用いて真空成形する場合に、クランプ32に印刷シート22をセットし、これをヒータ33で加熱軟化させる。そして、雄型31を上昇させて印刷シート22を当該雄型31に接近させたのち、真空ポンプにて印刷シート22と雄型31との空隙の空気を吸引する。これにより、軟化した印刷シート22は雄型31の表面形状に沿って凹凸状に成形されることになる。このようにして成形された印刷シート22を図4に示す。

【0026】次に、図4に示す印刷シート22を図5に示す射出成形機4の一方の型41にセットする。この射出成形機4は、化粧パネル2の形状にに応じた内面形状を有する2つの成型型41、42と、図外の押出機とを有し、成型型41、42を型締めすることにより形成されるキャビティ43に溶融樹脂を注入することで、裏面に印刷シート22がインサートされた化粧パネル2を成形することができる。

【0027】なお、本発明においては印刷シートの成形方法は上述した真空成形法のみに限定されず、プレス（圧縮）成形法などの成形方法も用いることができる。

【0028】第3の工程では、凹凸状に成形された印刷シートを透明パネルの成型型にインサート（セット）する。こうして印刷シートをインサートしたのち、第4の工程では、成型型を型締めし、型内に形成されたキャビティに樹脂を注入して透明パネルを成形する。この成形

方法は特に限定されないが、例えば射出成形法などが好ましく用いられる。

【0029】このようにして、表面が平坦状、裏面が凹凸状に形成され当該裏面に印刷シートが一体成形された化粧パネルを得ることができる。この製造方法では、印刷シートが透明パネル成形時に一体成形されるので、工程数を最小限に抑制することができ、生産性の向上が図られる。また、低コストでスロットマシン化粧パネルを製造することができる。

【0030】なお、以上説明した実施形態は、本発明の理解を容易にするために記載されたものであって、本発明を限定するために記載されたものではない。したがって、上記の実施形態に開示された各要素は、本発明の技術的範囲に属する全ての設計変更や均等物をも含む趣旨である。

【0031】例えば、上述した実施形態では透明パネル21および印刷シート22は、何れもアクリル樹脂により構成したが、印刷シート22はポリ塩化ビニル樹脂やポリエチレンテレフタレート樹脂により構成することもできる。

【0032】

【発明の効果】以上述べたように本発明によれば、一方が平坦であっても二次元的デザインでは表現できない立体感を有する化粧パネルを提供することができ、ゲーム機の筐体を使用して好ましい。

【図面の簡単な説明】

【図1】本発明のゲーム機用化粧パネルの実施形態を示す断面図である。

【図2】本発明のゲーム機用化粧パネルの製造方法を説明するための断面図（印刷工程）である。

【図3】本発明のゲーム機用化粧パネルの製造方法を説明するための断面図（印刷シートの真空成形工程）である。

【図4】印刷シートの真空成形工程により得られた印刷シートを示す断面図である。

【図5】本発明のゲーム機用化粧パネルの製造方法を説明するための断面図（透明パネルの射出成形工程）である。

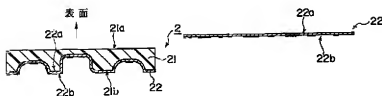
【図6】スロットマシンゲーム機を示す斜視図である。

【図7】従来の化粧パネルを示す断面図である。

【符号の説明】

- 1…スロットマシンゲーム機（ゲーム機）
- 2…化粧パネル
- 21…透明パネル
- 21a…表面
- 21b…裏面
- 22…印刷シート
- 22a…接合面
- 22b…印刷面
- 3…真空成形機
- 4…射出成形機

【図1】

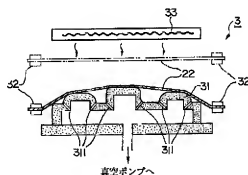


【図2】

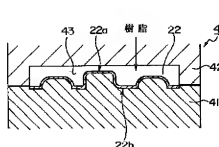


【図4】

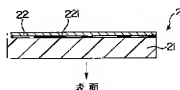
【図3】



【図5】



【図7】



【図6】

